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(54) DETERMINATION OF PHOSPHATE ION CONCENTRATION

(57)Abstract: PROBLEM TO BE SOLVED: To provide a method for detecting phosphate ion of an indicator of eutrophication, and for rapidly and readily measuring the phosphate ion. SOLUTION: A mixture of a sample liquid containing phosphate ion with a liquid containing a maltose is brought into contact with immobilized enzymes obtained by immobilizing maltase phosphorylase, mutarotase and glucose oxidase on a carrier to provide hydrogen peroxide, and the obtained contacted liquid containing the hydrogen peroxide is mixed with a peroxidase/luminol-based detecting reagent to provide a chemiluminescence. The quantity of the light of the chemiluminescence is measured to determine the concentration of the phosphate ion in the method for detecting the phosphate ion. A maltose- containing carrier liquid after injection of the phosphate ion-containing sample liquid is transported into a mixing part through an immobilized enzyme column installed on the way of the passage, mixed in the mixing part with the detecting reagent from other passages, allowed to generate the chemiluminescence in a flow cell. The generated luminescent quantity is measured to measure the phosphate ion concentration by a flow injection analytic method.